

APPENDIX G

TRAFFIC REPORT

DRAFT TRAFFIC IMPACT ANALYSIS

**Tentative Tract Map 53647
City of La Cañada Flintridge**

Prepared for

EIP Associates

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1.0 INTRODUCTION

EIP Associates retained the service of Meyer, Mohaddes Associates (MMA) to conduct a traffic study for a *Tentative Tract map 53647, Residential Development* (the project) in La Cañada Flintridge. The vicinity of the project site is illustrated in **Figure 1**. This report documents the traffic impact analysis of the proposed project upon the adjacent street network. The scope of work and methodology for analysis documented in this report have been developed by Meyer, Mohaddes Associates (MMA) in consultation with the City of La Cañada Flintridge Traffic and Planning Department staff.

1.1 Project Description

The project site is a proposed 18-lot subdivision entitled Tentative Tract 53647 in the City of La Cañada Flintridge. The Applicant has under control approximately 47 acres of undisturbed hillside area and proposes to provide infrastructure and buildable pads for 17 single-family residential lots with an additional lot remaining undeveloped and vacant (open space/conservation).

As shown on **Figure 1**, regional access to the project site is provided by the Foothill Freeway (I-210) which travels in a north-south directions east of the project. **Figure 2** illustrates the proposed site plan for the proposed development.

Two existing streets and a new proposed street would provide access to the project site. The existing streets Palmerstone Drive and Haverstock Road connect to Saint Katherine Drive and Inverness Drive respectively, which are the only streets providing access in the study area, considering the mountainous nature of this region. Highland Drive, Linda Vista Drive, and Figueroa Street form the intermediate level, in the street network system for the study area. These streets connect the local streets to the collectors and other local streets at the foothill, which provide freeway access. As shown on **Figure 2**, 4 of the 17 lots would have access off of Haverstock Road, 10 lots would access off of Monarch Drive (new roadway) and the remaining 3 lots would enter and exit the site via Palmerstone Drive.

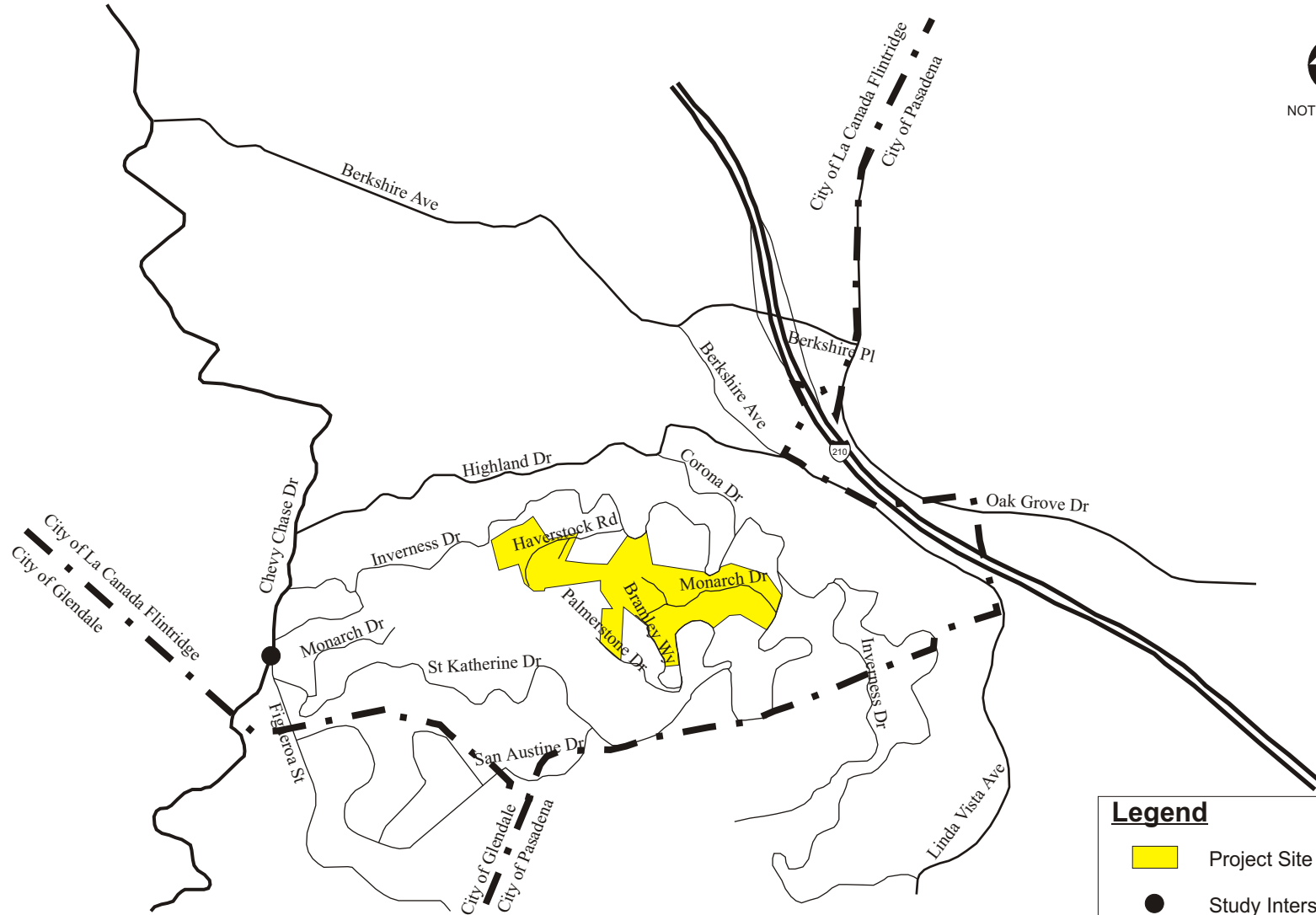
1.2 Study Locations

In conjunction with City staff, a total of one intersection and four street segments were identified for analysis. The intersection of Chevy Chase Drive and Figueroa Street was identified because it represents the location that could experience an increase in traffic volumes and potential traffic impacts due to the proposed project. The location of the study intersection is shown in **Figure 1**. In addition, four street segments were identified for analysis, the locations include the following:




- Saint Katherine Drive (south of project site)
- Inverness Drive (east of Chevy Chase Drive)
- Berkshire Place (west of I-210 Ramps)
- Corona Drive (south of Highland Drive)



NOT TO SCALE



Legend

-  Project Site
-  Study Intersection
-  City Boundaries

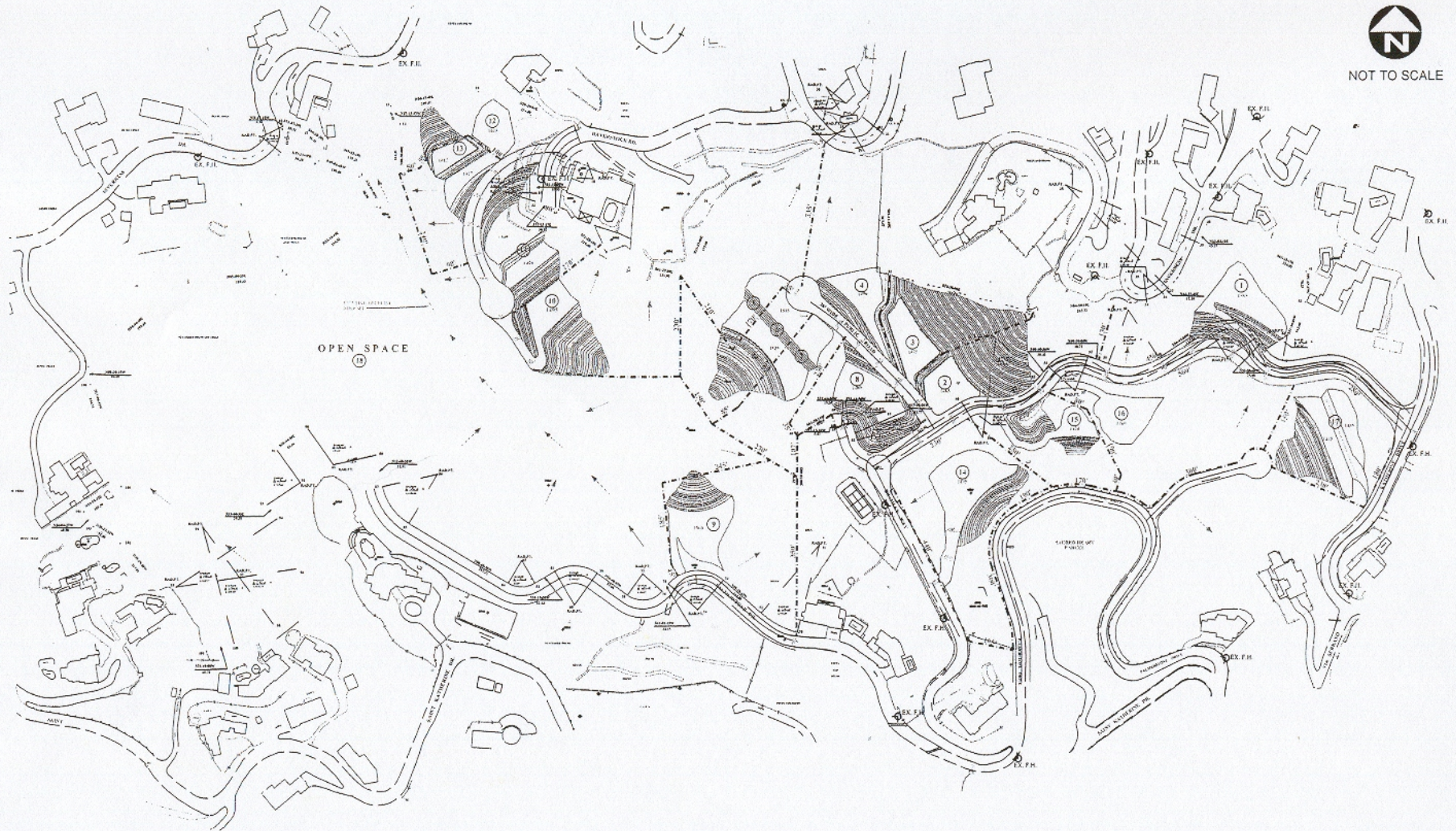


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**Traffic Impact Analysis
Tentative Tract Map 53647 - City of La Canada Flintridge**

**FIGURE 1
Study Area**



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Source: Spindler Engineering Corporation

**Traffic Impact Analysis
Tentative Tract Map 53647 - City of La Canada Flintridge**

**FIGURE 2
Site Plan**

2.0 EXISTING CONDITIONS

MMA performed a comprehensive site visit to the study area to assess the existing conditions near the project site.

2.1 Description of Existing Road Network

Chevy Chase Drive is a north-south facility located west of the project site. According to the city's circulation element this street is classified as a Residential Collector. The approximate curb-to-curb roadway width is 35 feet. This collector has one-lane in each direction. On-street parking is available along some portions of this street.

Highland Drive is an east-west Street located north of the project site. This street is classified as Local Residential with an approximate curb-to-curb roadway width of 30 feet. This local street has one-lane in each direction. On-street parking is available on some sections of this street while the posted speed limit on this street is 25 mph.

Figueroa Street is a north-south facility located west of the project site. It is classified as a Local Residential Street. This street has one-lane in each direction with an approximate curb-to-curb roadway width of 30 feet.

Saint Katherine Drive is an east-west Street located south of the project site. This street is classified as Local Residential with an approximate curb-to-curb roadway width of 25 feet. This local street has one-lane in each direction. The posted speed limit on this street is 25 mph.

Inverness Drive is an east-west facility located north of the project site. It is classified as Local Residential Street. This street has one-lane in each direction with an approximate curb-to-curb roadway width of 25 feet. The posted speed limit for this street is 25 mph in mountainous terrain.

Corona Drive is a north-south facility located north of the project site. It is classified as Local Residential Street. This street has one-lane in each direction with an approximate curb-to-curb roadway width of 22 feet.

Berkshire Avenue is an east-west street located north of the project site. This street is classified as Local Residential and the curb-to-curb roadway width is 30. This local street has one-lane in each direction.

Palmerstone Drive and Bramley Way are located south of the project site. They are classified as Local Residential Streets and only function as access streets for the residential developments. Palmerstone Drive has one-lane in each direction with an approximate curb-to-curb roadway width of 30 feet. Bramley Way has one-lane in each direction with an approximate curb-to-curb roadway width of 22 feet. These streets also serve as access streets for the proposed residential development.

Haverstock Road is located north of the project site. Its classified as Local Residential Street and only functions as access street for residential developments. Haverstock Road has one-lane in each direction with an approximate curb-to-curb roadway width of 30 feet. This street also serves as an access street for the proposed residential development. On-street parking is available on this street.

2.2 Study Intersection

As mentioned previously, one intersection (Chevy Chase Drive and Figueroa Street) was identified for analysis. A brief description of the study intersection follows.

Chevy Chase Drive and Figueroa Street form a skewed T-intersection which is stop-controlled on the Figueroa Street westbound approach. The Chevy Chase Drive northbound and southbound directions are not controlled (i.e., are not controlled by a stop sign) at this location. The third leg of the intersection (Figueroa Street) meets Chevy Chase Drive at an angle less than 45 degrees. The westbound approach functions as a shared left-turn/right-turn lane. The southbound approach provides a shared left-turn/through lane while the northbound approach functions as a shared right-turn/through lane. **Figure 3** provides the existing lane configuration at this location.

2.3 Existing Traffic Volumes

At the analyzed intersection of Chevy Chase Drive and Figueroa Street new peak period turning movement counts were conducted in December 2002. The counts were conducted from 7:00-9:00 AM and 4:00-6:00 PM, the traffic analysis was based on the highest single hour of traffic during the morning and evening peak periods.

Similarly, new twenty-four hour traffic counts were also conducted at the analyzed street segments. The morning and evening peak hour traffic volumes were identified and utilized in the traffic analysis for these street segments. As mentioned above these locations include:

- Saint Katherine Drive (south of project site)
- Inverness Drive (east of Chevy Chase Drive)
- Berkshire Place (west of I-210 Ramps)
- Corona Drive (south of Highland Drive)

Figure 3 illustrates the existing peak hour traffic volumes for the analyzed locations. As shown, the directional peak hour traffic volumes along the analyzed segments near the project site are relatively low with volumes ranging from approximately 10 vehicles per hour (along Saint Katherine Drive during the AM peak hour and Inverness Drive during the PM peak hour) and 150 vehicles per hour (along Corona Drive during the PM peak hour).

2.4 Level of Service Methodology and Existing Level of Service

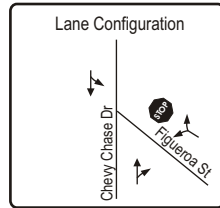
Traffic operations and impact analysis for the study intersection was conducted using intersection levels of service (LOS) and delay as evaluation criteria as summarized in **Table 1**.

Based upon the intersection turning movements and existing geometrics, MMA analyzed the AM and PM peak hour operating conditions for the study intersection. The study intersection was analyzed using Highway Capacity Manual (HCM) delay methodology, which is described in the Highway Capacity Manual, Special Report 209 (Transportation Research Board, Washington, D.C., 2000).

Level of Service (LOS) is the primary indicator for traffic operation performance at intersections. Level of Service is defined by a range of grades from A (best) to F (worst). LOS “A” represents free-flow conditions with little or no delay at intersections.



NOT TO SCALE



AM Peak Hour Traffic Volume

← 40	→ 31	74
55	17	54

PM Peak Hour Traffic Volume

← 85	→ 23	15
62	10	25

Legend

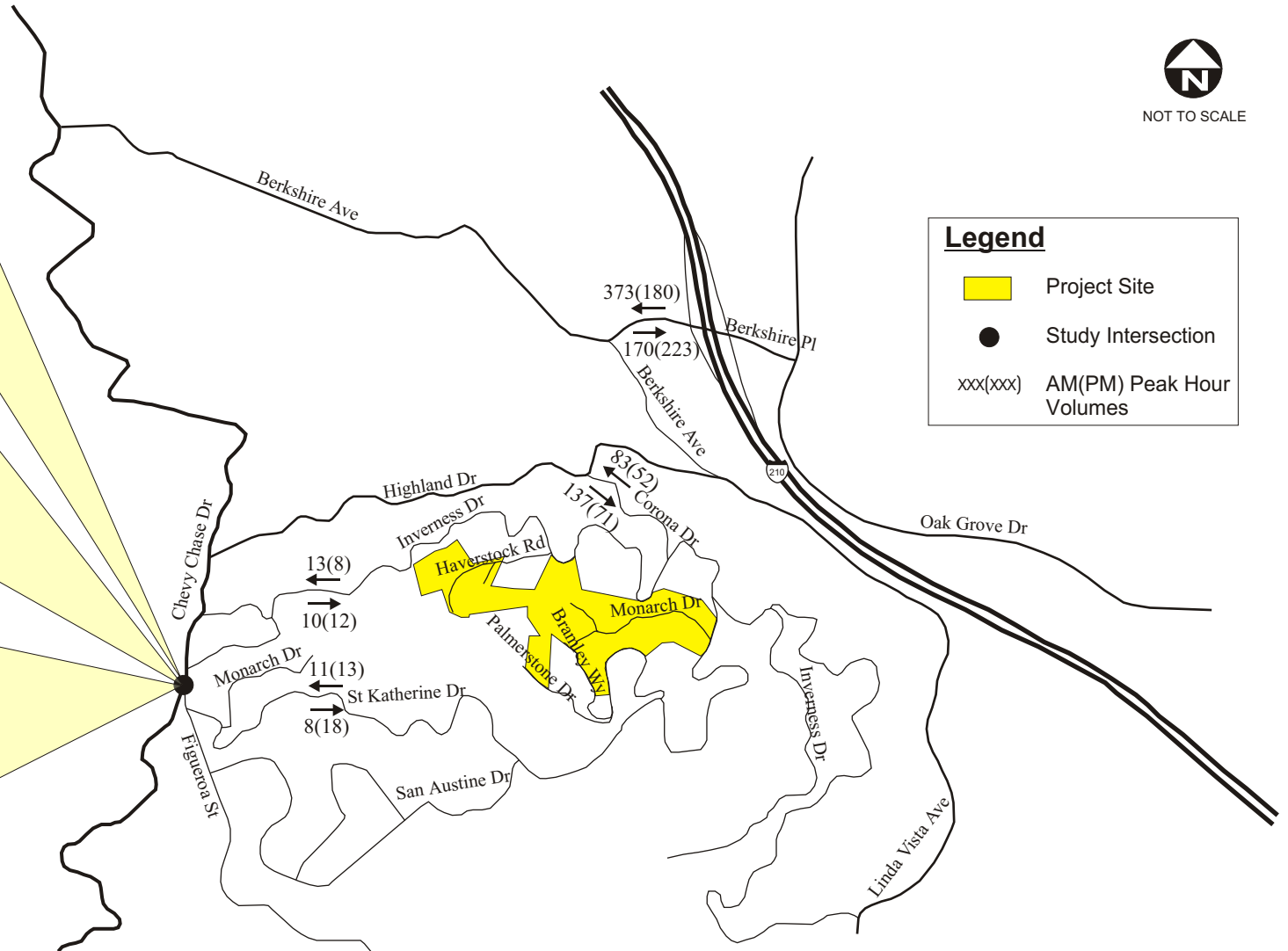


Project Site



Study Intersection

xxx(xxx) AM(PM) Peak Hour Volumes



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Traffic Impact Analysis
Tentative Tract Map 53647 - City of La Canada Flintridge

FIGURE 3
Existing Conditions

TABLE 1: LEVEL OF SERVICE INTERPRETATION

Level of Service	Description	Signalized Intersection Delay (seconds per vehicle)	Stop-Controlled Intersection Delay (seconds per vehicle)
A	Excellent operation. All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.	≤ 10	≤ 10
B	Very good operation. Many drivers begin to feel somewhat restricted within platoons of vehicles. This represents stable flow. An approach to an intersection may occasionally be fully utilized and traffic queues start to form.	>10 and ≤ 20	>10 and ≤ 15
C	Good operation. Occasionally drivers may have to wait more than 60 seconds, and back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted.	>20 and ≤ 35	>15 and ≤ 25
D	Fair operation. Cars are sometimes required to wait more than 60 seconds during short peaks. There are no long-standing traffic queues.	>35 and ≤ 55	>25 and ≤ 35
E	Poor operation. Some long-standing vehicular queues develop on critical approaches to intersections. Delays may be up to several minutes.	>55 and ≤ 80	>35 and ≤ 50
F	Forced flow. Represents jammed conditions. Backups form locations downstream or on the cross street may restrict or prevent movement of vehicles out of the intersection approach lanes; therefore, volumes carried are not predictable. Potential for stop and go type traffic flow.	> 80	> 50
Source: <i>Highway Capacity Manual</i> , Special Report 209, Transportation Research Board, Washington, D.C., 2000.			

LOS “F” characterizes extremely unstable flow conditions and severe congestion with volumes at or near the designed capacity. At LOS “F”, vehicles are likely to experience major delays crossing an intersection. Minor incidents may lead to forced flow conditions (LOS “F”) with operating traffic flows substantially below capacity. This results in long queues backing up from all approaches to intersections. This analysis incorporates the effects of the lane geometry and signal phasing (i.e. protected or permitted left turns) to produce the results described by the level of service scale indicated by delay and LOS.

Level of service D is generally considered to be the lowest acceptable LOS in an urban or suburban area. Levels of service E and F are considered to be unacceptable operating conditions, which warrant mitigation. The City of La Cañada Flintridge utilizes LOS D as the minimum acceptable level of service.

The operating conditions at the analyzed street segments are also based on levels of service (LOS). A roadway segment is assumed to operate under acceptable conditions if the LOS is D or better (A through D). Unlike the analyzed intersection, the street segments level of service is based on a volume-to-capacity ratio (V/C) rather than delay. The V/C ratio compares the amount of traffic (volume) during the peak hour a street segment is able to accommodate (capacity) and determines the operating conditions (V/C ratio and corresponding LOS) based on the ranges shown in **Table 2**

TABLE 2: LEVEL OF SERVICE DEFINITIONS FOR STREET SEGMENTS

LOS	Interpretation	Volume/Capacity Ratio
A	Excellent. Primarily free-flow conditions at about 90 percent of free-flow speed. Vehicles are completely free to maneuver within the traffic stream. Stopped delay at intersections is minimal.	0.000 - 0.600
B	Very good. Reasonably unimpeded flow at about 70 percent of free-flow speed. Ability to maneuver is only slightly restricted and delay at intersections is not bothersome.	0.601 - 0.700
C	Good. Stable operations at about 50 percent of the free-flow speed. Ability to maneuver and change lanes may be restricted at mid-block locations. Motorists will begin to experience tension while driving.	0.701 - 0.800
D	Fair. Small increase in flow begin to cause substantial increases in intersection approach delay. Ability to maneuver becomes more difficult, with speeds about 40 percent of free-flow speed.	0.801 - 0.900
E	Poor. Characterized by significant delays at intersection approaches and travel speeds about one-third of free-flow speed. Ability to maneuver is severely restricted and driver tension is high.	0.901 - 1.000
F	Failure. Extremely low travel speeds and unstable traffic flow. Characterized by long delays at intersection approaches, severe difficulty in maneuvering between lanes, and extremely high driver tension.	Over 1.000
Source: Highway Capacity Manual, Special Report 209, Transportation Research Board, Washington D.C., 1997.		

Therefore utilizing the City’s standard of LOS D as the minimum acceptable level of service, any study roadway segment in the traffic analysis with an LOS of E or F, and/or a volume to capacity ratio greater than 0.90 will be considered as unacceptable and would require improvements.

The level of service analysis was performed using TRAFFIX software. TRAFFIX can be used for a variety of tasks such as to forecast the traffic conditions under different scenarios and to calculate level of service at critical intersections. It has the ability to perform level of service analysis for both signalized and unsignalized intersections using a variety of acceptable methodologies.

2.5 Intersection Level of Service

Intersection delay and corresponding LOS for the analyzed intersection is summarized in **Table 3**. In the AM peak hour the study intersection of Chevy Chase Drive and Figueroa Street is expected to operate at very good levels of service (LOS A), with a delay of 9.6 seconds per vehicle. In the PM peak hour the intersection is also expected to operate at a very good LOS A, with a delay of 9.5 seconds per vehicle.

2.6 Street Segment Level of Service

As mentioned before, a total of four roadway segments were analyzed for both the morning and evening peak hours. **Table 4** summarizes the results of the street segment level of service analysis. As shown, three of the four roadway segments operate at LOS A, during both the AM and PM peak hours. The analyzed segment along Berkshire Place currently operates at LOS C in westbound direction during the AM peak hour.

TABLE 3: INTERSECTION LEVEL OF SERVICE

Location	Peak Hour	Delay (sec/veh)	V/C	LOS
1. Chevy Chase Drive / Figueroa Street	AM	9.6	--	A
	PM	9.5	--	A

TABLE 4
EXISTING CONDITION
STREET SEGMENT PEAK HOUR LEVEL OF SERVICE ANALYSIS

Location	Peak Hour	Per Lane Capacity	No. of Lanes	Northbound/Eastbound			No. of Lanes	Southbound/Westbound		
				Vol	V/C	LOS		Vol	V/C	LOS
1. Saint Katherine Drive south of project site	AM	510	1	8	0.02	A	1	11	0.02	A
	PM	510	1	18	0.04	A	1	13	0.03	A
2. Inverness Drive east of Chevy Chase Drive	AM	510	1	10	0.02	A	1	13	0.03	A
	PM	510	1	12	0.02	A	1	8	0.02	A
3. Berkshire Place west of I-210 Ramps	AM	510	1	170	0.33	A	1	373	0.73	C
	PM	510	1	223	0.44	A	1	180	0.35	A
4. Corona Drive east of Highland Drive	AM	510	1	137	0.27	A	1	83	0.16	A
	PM	510	1	71	0.14	A	1	52	0.10	A

Note:

AM and PM peak hour capacity assumed to be 10% of daily capacity of 5100 vehicles (Daily capacity based on La Canada Flintridge Circulation Element)

3.0 FUTURE NO PROJECT CONDITION

This section summarizes the assumptions, methodology, and analysis related to future conditions without the proposed project. This will serve as a basis for estimating impacts of the proposed project on background conditions. **Figure 4** show the traffic volumes for future base conditions.

The anticipated buildout year of the proposed project is expected to be 2008. The projection of Year 2008 No-Project traffic consists of existing traffic plus ambient traffic growth (general background regional growth) plus growth in traffic generated by specific cumulative projects expected to be completed by the Year 2008. The following describes the two growth components.

3.1 Ambient Traffic Growth

Ambient traffic growth is the traffic growth that will occur in the study area due to general employment growth, housing growth and growth in regional through trips in southern California. Even if there was no change in housing or employment in the City of Los Angeles, there will be some background (ambient) traffic growth in the region. Per city staff, a two percent per year growth rate was assumed as a conservative estimate of traffic increase in the study area. Existing 2003 traffic volumes were increased by a factor of 1.10 to account for ambient traffic growth to the Year 2008. It should be noted that for the analyzed street segments, this growth rate may be conservative in that, it is not expected that background traffic would increase at this level given the area of the analyzed locations and surrounding land uses.

3.2 Cumulative Project Growth

Cumulative project traffic growth, which is growth due to specific, known development projects in the City of La Cañada Flintridge, is also included in the analysis of the Year 2008 No-Project conditions. Based on coordination with City staff from City of La Cañada Flintridge, there were a total of nine projects within the study area, which may affect traffic circulation within the study area. The projects, which could affect the study area, are listed in **Table 5**. **Table 5** also summarizes the trip generation estimates for each of the nine projects. **Figure 5** shows the locations of the cumulative projects.

TABLE 5: CUMULATIVE PROJECT TRIP GENERATION

No.	Address	Size	Landuse	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
1	4055 Chevy Chase Dr	1 du	Single Family Housing	0	1	1	1	0	1
2	355 Corona Dr	1 du	Single Family Housing	0	1	1	1	0	1
3	4339 Oakwood Ave	1 du	Single Family Housing	0	1	1	1	0	1
4	355 Flintridge Oaks Dr	1 du	Single Family Housing	0	1	1	1	0	1
5	4075 Chevy Chase Dr	1 du	Single Family Housing	0	1	1	1	0	1
6	5024 Angeles Crest Hwy	1 du	Single Family Housing	0	1	1	1	0	1
7	4596 Leir Dr	1 du	Single Family Housing	0	1	1	1	0	1
8	5187 Haskell St	1 du	Single Family Housing	0	1	1	1	0	1
9	4075 Chevy Chase Dr	1 du	Single Family Housing	0	1	1	1	0	1

3.3 Intersection Level of Service

The morning and evening peak hour delay and corresponding level of service for the analyzed intersection is summarized in **Table 6**. During both the AM and PM peak hour, the study intersection of Chevy Chase Drive and Figueroa Street is expected to operate at LOS A. Even with the addition of ambient growth and cumulative project trips, the delay at the intersection of Chevy Chase and Figueroa Street is less than 10 sec per vehicle.

TABLE 6: FUTURE NO PROJECT INTERSECTION LEVEL OF SERVICE

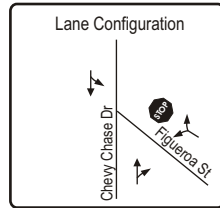
Location	Peak Hour	Delay (sec/veh)	V/C	LOS
1. Chevy Chase Drive / Figueroa Street	AM	9.8	--	A
	PM	9.6	--	A

3.4 Street Segment Level of Service

Street segment level of service, volumes and volume to capacity results are summarized in **Table 7**. As shown, the street segments were analyzed in both directions, for both peak hours. All the street segments are projected to operate at LOS A, except for Berkshire Place, which operates at LOS D in westbound direction for AM peak hour. The volume to capacity ratio at this location is just over 0.80, due to the addition of ambient growth and cumulative project trips. It should be noted that the LOS D projected for this street segment is still considered acceptable based on the City's standards.



NOT TO SCALE



AM Peak Hour Traffic Volume

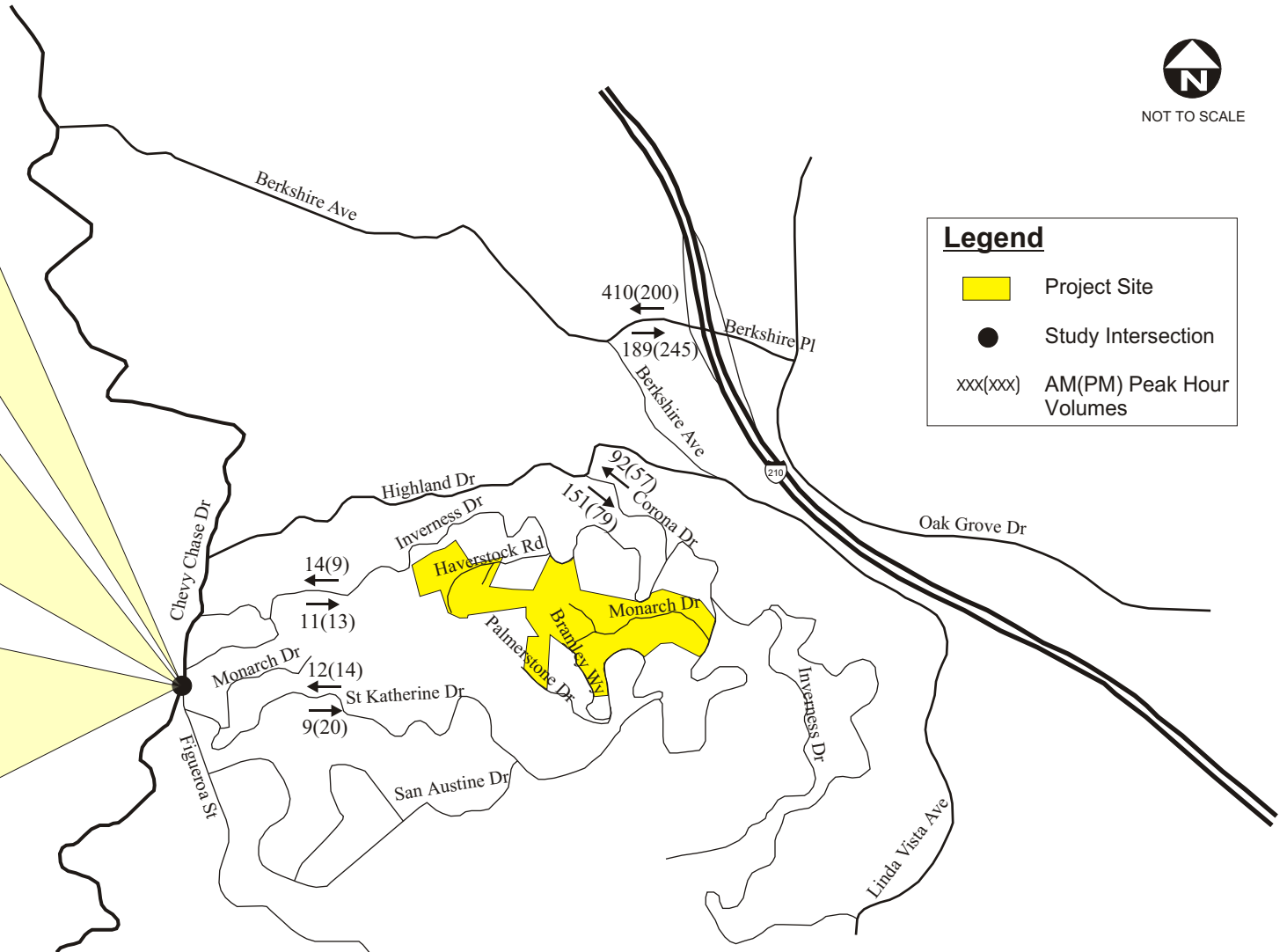
← 45	→ 81
← 34	→ 59
← 61	→ 19

PM Peak Hour Traffic Volume

← 94	→ 17
← 25	→ 28
← 69	→ 11

Legend

- Project Site
- Study Intersection
- xxx(xxx) AM(PM) Peak Hour Volumes



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Traffic Impact Analysis
Tentative Tract Map 53647 - City of La Canada Flintridge

FIGURE 4
Future No Project Conditions

#6 - #9

#3

#4

#5

#1

Berkshire Ave

Berkshire Pl

Berkshire Ave

Oak Grove Dr

Corona Dr

#2

Highland Dr

Inverness Dr

Haverstock Rd

Palmerstone Dr

Monarch Dr

St Katherine Dr

San Austine Dr

Chevy Chase Dr

Figueras St

Inverness Dr

Linda Vista Ave



NOT TO SCALE

Legend



Project Site

#X



Cumulative Project



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Traffic Impact Analysis
Tentative Tract Map 53647 - City of La Canada Flintridge

FIGURE 5
Location of Cumulative Projects

TABLE 7
FUTURE NO PROJECT CONDITION
STREET SEGMENT PEAK HOUR LEVEL OF SERVICE ANALYSIS

Location	Peak Hour	Per Lane Capacity	No. of Lanes	Northbound/Eastbound			Southbound/Westbound		
				Vol	V/C	LOS	Vol	V/C	LOS
1. Saint Katherine Drive south of project site	AM	510	1	9	0.02	A	12	0.02	A
	PM	510	1	20	0.04	A	14	0.03	A
2. Inverness Drive east of Chevy Chase Drive	AM	510	1	11	0.02	A	14	0.03	A
	PM	510	1	13	0.03	A	9	0.02	A
3. Berkshire Place west of I-210 Ramps	AM	510	1	189	0.37	A	410	0.81	D
	PM	510	1	245	0.48	A	200	0.39	A
4. Corona Drive east of Highland Drive	AM	510	1	151	0.30	A	92	0.18	A
	PM	510	1	79	0.16	A	57	0.11	A

Note:

AM and PM peak hour capacity assumed to be 10% of daily capacity of 5100 vehicles (Daily capacity based on La Canada Flintridge Circulation Element)

4.0 FUTURE WITH PROJECT CONDITIONS

The following section describe the methodology for developing the project related trip estimates, the assignment of these trips and the resulting traffic conditions with the project at the analyzed intersection and street segments.

4.1 Forecast Trip Generation of the Project

The first step in analyzing the future conditions with the project is to estimate trip generation due to the proposed project. Traffic generation estimates for the proposed residential project were developed through the application of trip generation rates obtained from the Institute of Transportation Engineers' (ITE) *Trip Generation, 6th Edition* (1997). **Table 8** summarizes the estimated trip generation for the project.

TABLE 8: PROJECT TRIP GENERATION

Description	Size		Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Single-family residential	17	units	163	3	10	13	11	6	17

4.3 Forecast Trip Distribution of the Project

The next step in the forecast of project traffic is the anticipated distribution of the trip estimates. The trip distribution assumptions are used to determine the origin and destination of the new vehicle trips associated with the project. The geographic distribution of trips generated by the project is based on the demographics of the area, the street system that serves the site, and the level of accessibility of the routes to and from the project site. Based on these parameters and in conjunction with the city staff, a trip distribution pattern for the proposed project was developed. **Figure 6** illustrates the project distribution pattern and **Figure 7** shows the resulting project only AM and PM peak hour traffic volumes at the analyzed intersection and street segments.



NOT TO SCALE

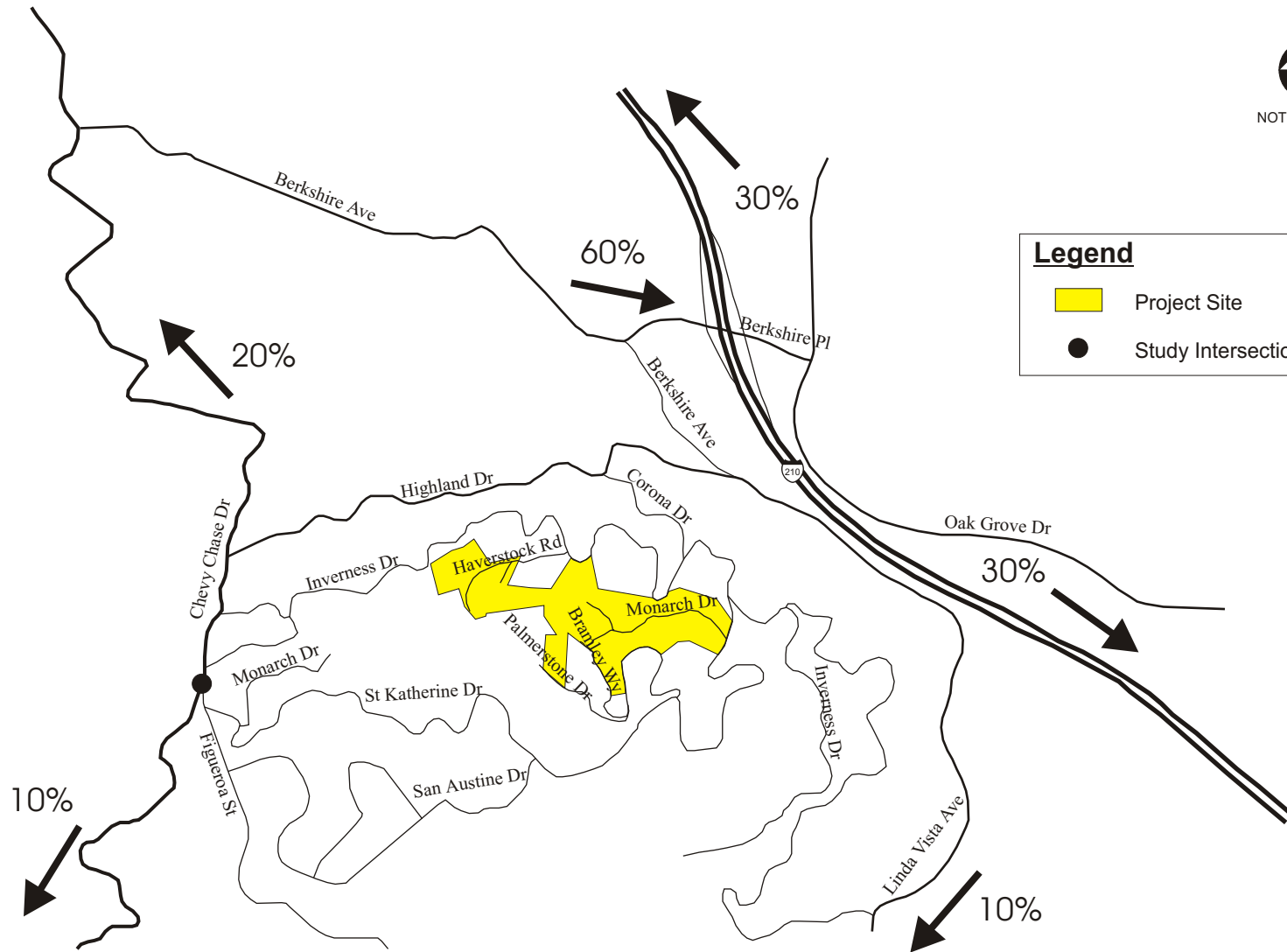
Legend



Project Site



Study Intersection



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Traffic Impact Analysis
Tentative Tract Map 53647 - City of La Canada Flintridge

FIGURE 6
Project Trip Distribution



NOT TO SCALE

Legend

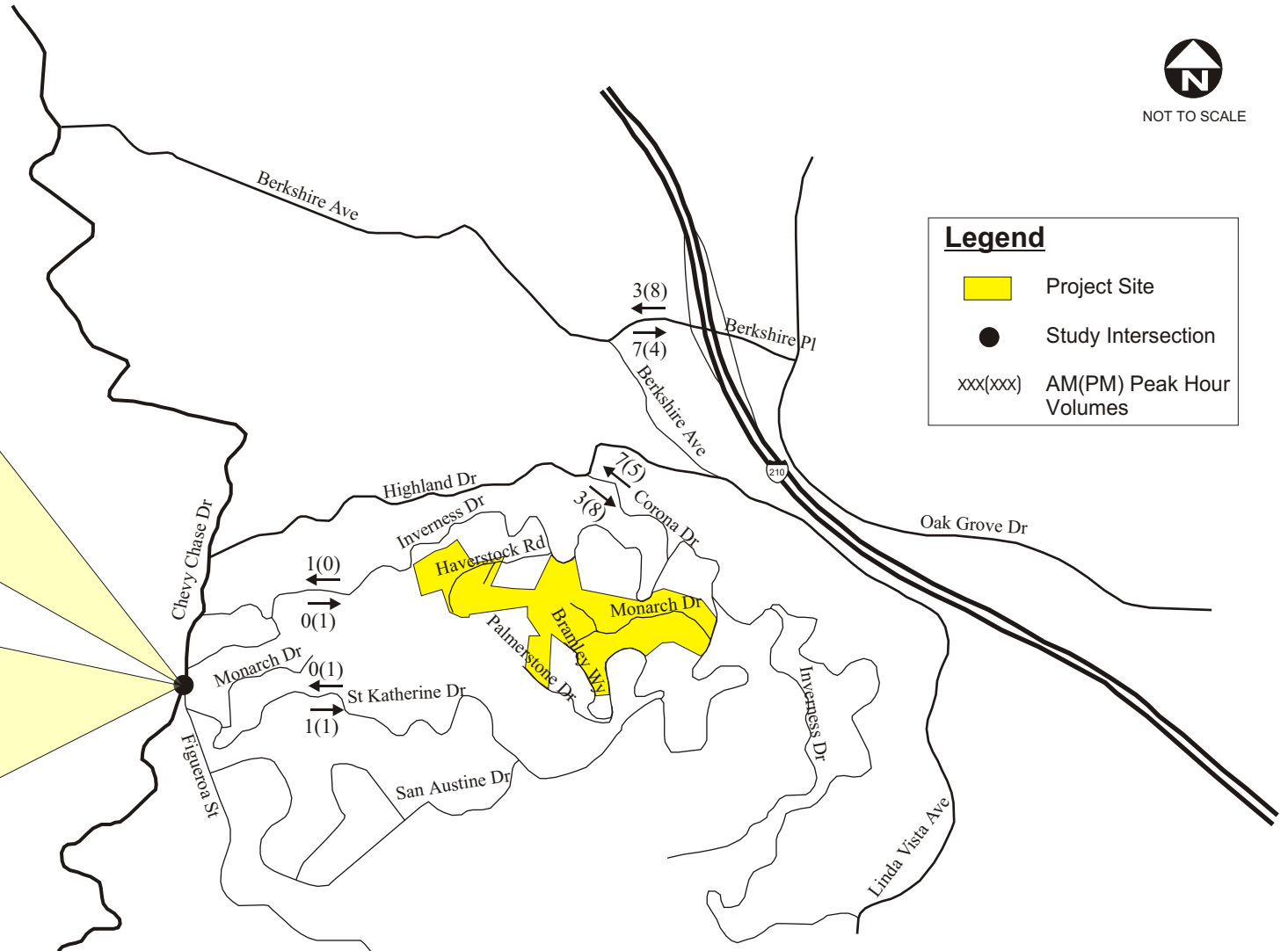
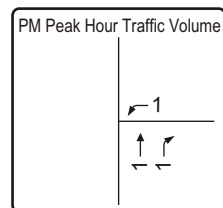
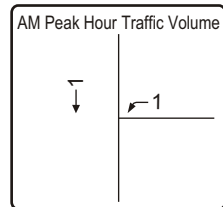


Project Site



Study Intersection

xxx(xxx) AM(PM) Peak Hour Volumes



Meyer, Mohaddes Associates, Inc.

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Traffic Impact Analysis
Tentative Tract Map 53647 - City of La Canada Flintridge

FIGURE 7
Project Only Traffic Volume

4.4 Future with Project analysis

Based on the estimated trip generation and distribution assumptions described above, the resulting project traffic volumes were added to the Future No Project traffic projections. The resulting Future With Project peak hour traffic volumes are shown on **Figure 8**.

4.5 Intersection Level of Service

The intersection level of service analysis for the analyzed location under future conditions with the proposed project is summarized in **Table 9**. During both the AM and PM peak hours, the study intersection of Chevy Chase Drive and Figueroa Street is expected to operate at a very good level of service (i.e., LOS A). As previously shown on **Figure 7**, the additional traffic added to the intersection of Chevy Chase and Figueroa Street due to the project is expected to be relatively low. As a result, the overall delay at this intersection remains the same as the Future No Project condition even with the added project traffic volumes. Because the intersection is projected to operate at acceptable levels of service (i.e., LOS D or better) with the addition of project traffic, the project would not have a significant impact at the intersection and improvements would not be needed.

TABLE 9: FUTURE WITH PROJECT INTERSECTION LEVEL OF SERVICE ANALYSIS

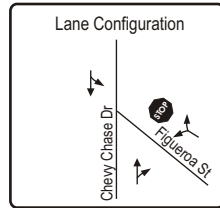
Location	Peak Hour	Delay (sec/veh)	V/C	LOS
1. Chevy Chase Drive / Figueroa Street	AM	9.8	--	A
	PM	9.6	--	A

4.6 Street Segment Level of Service

The analyzed street segment V/C ratios and corresponding LOS are summarized in **Table 10** for future conditions with the project. As shown, all the street segments operate at LOS A, except for Berkshire Place, which operates at LOS D in westbound direction for AM peak hour. The volume to capacity ratio for all four street segments increase due to the addition of project traffic in both the AM and PM peak hours however, per the City's acceptable level of service standard (i.e., LOS D or better) all of the analyzed locations are expected to operate at acceptable levels of service. Therefore, no project related significant impacts are expected at the analyzed street segment locations. The street segment LOS and volume to capacity ratio for all analyzed scenarios (Existing, Future Base and Future With Project) are summarized in **Table 11**.



NOT TO SCALE



AM Peak Hour Traffic Volume

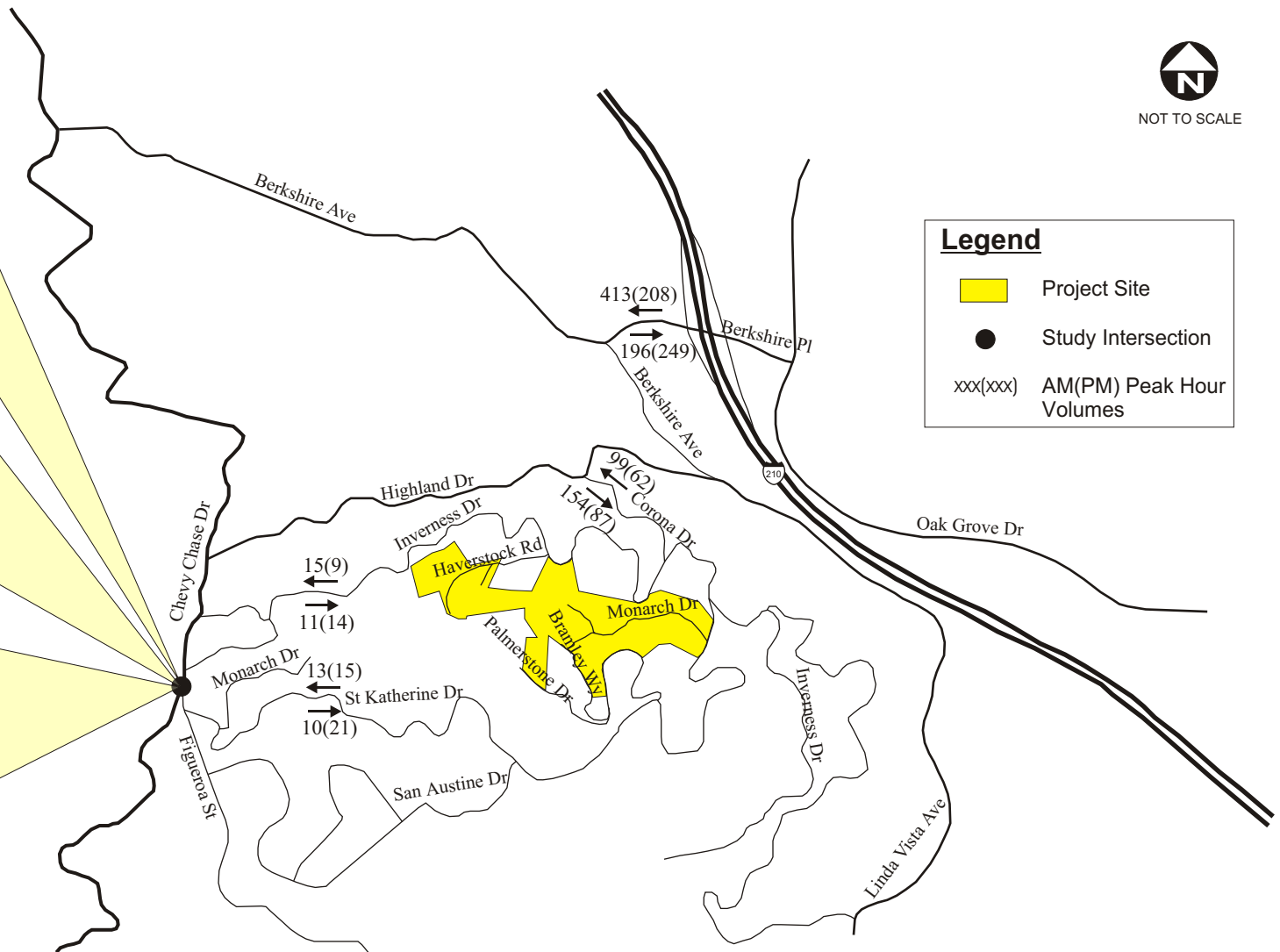
← 46	→ 81
← 34	→ 60
← 61	→ 19

PM Peak Hour Traffic Volume

← 94	→ 17
← 25	→ 29
← 70	→ 12

Legend

- Project Site
- Study Intersection
- xxx(xxx) AM(PM) Peak Hour Volumes



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FIGURE 8
Future With Project Conditions

TABLE 10
FUTURE WITH PROJECT CONDITION
STREET SEGMENT PEAK HOUR LEVEL OF SERVICE ANALYSIS

Location	Peak Hour	Per Lane Capacity	No. of Lanes	Northbound/Eastbound			Southbound/Westbound		
				Vol	V/C	LOS	Vol	V/C	LOS
1. Saint Katherine Drive south of project site	AM	510	1	10	0.02	A	13	0.03	A
	PM	510	1	21	0.04	A	15	0.03	A
2. Inverness Drive east of Chevy Chase Drive	AM	510	1	11	0.02	A	15	0.03	A
	PM	510	1	14	0.03	A	9	0.02	A
3. Berkshire Place west of I-210 Ramps	AM	510	1	196	0.38	A	413	0.81	D
	PM	510	1	249	0.49	A	208	0.41	A
4. Corona Drive east of Highland Drive	AM	510	1	154	0.30	A	99	0.19	A
	PM	510	1	87	0.17	A	62	0.12	A

Note:

AM and PM peak hour capacity assumed to be 10% of daily capacity of 5100 vehicles (Daily capacity based on La Canada Flintridge Circulation Element)

TABLE 11
STREET SEGMENT PEAK HOUR LEVEL OF SERVICE ANALYSIS COMPARISON

Location	Peak Hour	Existing Conditions						Future Base Condition						Future Project Condition					
		NB/EB			SB/WB			NB/EB			SB/WB			NB/EB			SB/WB		
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
1. Saint Katherine Drive south of project site	AM	0.02	A	0.02	A	0.02	A	0.02	A	0.02	A	0.02	A	0.02	A	0.03	A	0.03	A
	PM	0.04	A	0.03	A	0.03	A	0.04	A	0.04	A	0.03	A	0.04	A	0.03	A	0.03	A
2. Inverness Drive east of Chevy Chase Drive	AM	0.02	A	0.03	A	0.03	A	0.02	A	0.02	A	0.03	A	0.02	A	0.03	A	0.03	A
	PM	0.02	A	0.02	A	0.02	A	0.03	A	0.03	A	0.02	A	0.03	A	0.03	A	0.02	A
3. Berkshire Place west of I-210 Ramps	AM	0.33	A	0.73	C	0.73	C	0.37	A	0.81	D	0.81	D	0.38	A	0.81	D	0.81	D
	PM	0.44	A	0.35	A	0.35	A	0.48	A	0.39	A	0.39	A	0.49	A	0.41	A	0.41	A
4. Corona Drive east of Highland Drive	AM	0.27	A	0.16	A	0.16	A	0.30	A	0.18	A	0.18	A	0.30	A	0.19	A	0.19	A
	PM	0.14	A	0.10	A	0.10	A	0.16	A	0.11	A	0.11	A	0.17	A	0.12	A	0.12	A

4.7 Safety Issues

The traffic analysis also included an assessment of vehicular safety in the vicinity of the project site. As part of this assessment, research was conducted to determine if there were a high number of accidents, which could be related to any specific issue(s) (e.g., poor site distance, high speeds, confusing turn movements) in the area. Based on the available reported information from the County's Sheriff Department, accident data was collected over the last two years in the area of the project site. During this time period, as shown in **Figure 9**, the following accidents were reported (location and type):

- Chevy Chase Drive and Figueroa Street (Head-On)
- Chevy Chase Drive and Highland Drive (Overturned)
- Chevy Chase Drive and Highland Drive (Hit Object)
- Chevy Chase Drive and Highland Drive (Hit Object)
- Chevy Chase Drive and Inverness Drive (Hit Object)
- Chevy Chase Drive and Inverness Drive (Head-On)
- Chevy Chase Drive and Inverness Drive (Hit Object)
- Inverness Drive and Corona Drive (Hit Object)
- Inverness Drive and Corona Drive (Broadside)
- Inverness Drive and Saint Katherine Drive (Broadside)

Although three accidents each, have occurred at the intersections of Chevy Chase Drive with Highland Drive and Chevy Chase Drive with Inverness Drive in the last two years, the majority of these accidents are 'hit object' type; hence lowering speed limits would improve safety at these locations. It should also be noted that Chevy Chase Drive carries a much higher volume of traffic when compared to the surrounding residential streets. With the addition of the proposed project and the relatively low number of associated trips, it is not expected that the project would have an adverse affect on the traffic safety at the above locations.

It is suggested however that at the future intersection of Monarch Drive and Saint Katherine Drive the following improvements be considered in order to provide added safety in the area: installation of a stop sign on the (new) Monarch Drive approach with Saint Katherine Drive; reduced speed limit signs (15 mph) on Saint Katherine Drive approaches to the intersection; removal or trimming of vegetation not on private right-of-way which could improve sight distance at this location; and providing visual aid (e.g., installing mirrors) for traffic turning onto Saint Katherine Drive from Monarch Drive. Also, at the existing intersection of Palmerstone Drive and Saint Katherine Drive, reduced speed limit signs (15mph) on Saint Katherine Drive approached to the intersection are suggested.

Inverness Drive, Saint Katherine Drive, Corona Drive and Highland Drive, which serve as local access streets to the project site, are designated by the city as emergency evacuation routes. With the addition of the project it is not expected that these routes would be adversely impacted.

4.8 On-site Circulation

As mentioned in the project description there is a total of three access points serving the site. Given the relatively low number of units served by each of the on-site roadways it is not expected that adverse on-site circulation impacts would occur. Other than the improvements suggested at the future intersection of Monarch Drive with Saint Katherine Drive and Palmerstone Drive with

Saint Katherine Drive discussed above, the interfaces with the on-site roadways and the existing street system do not appear to cause any adverse impacts.

4.9 Construction Related Traffic

At this point, detailed construction information is not available for the proposed project however, given the location of the project site and the sensitive nature of the surrounding area, it is anticipated that there may be some short-term traffic impacts related to the construction phase of the project.

In order to keep these impacts to a minimum, a construction staging and traffic plan would be provided to the City for review and approval. The plan would include but is not limited to, hours of construction (limit to off peak hours), identification of haul routes, potential for off-site parking/staging areas, and shuttle bus to transport workers to/from remote parking area.



NOT TO SCALE

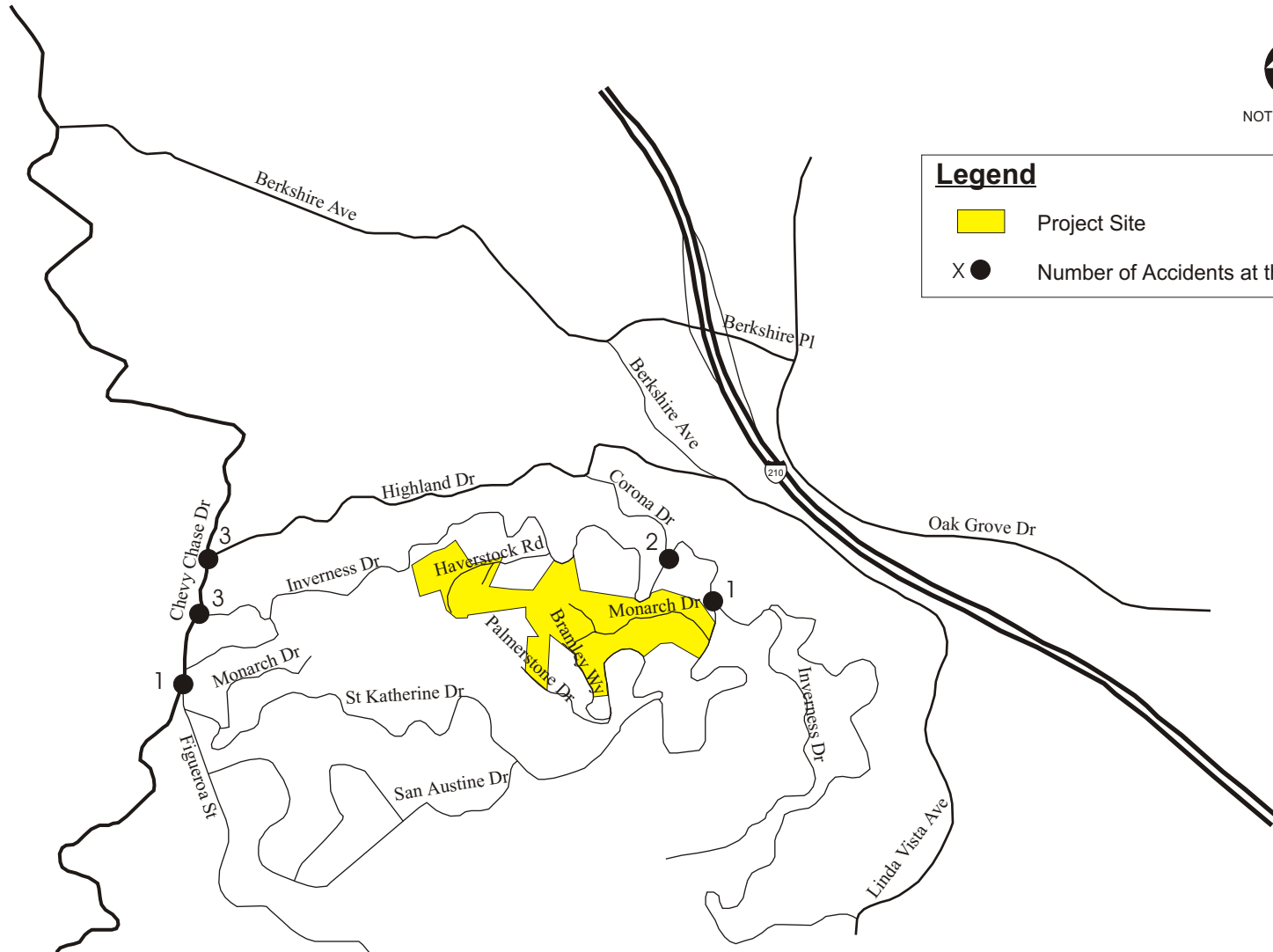
Legend



Project Site



X ● Number of Accidents at the Location



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**FIGURE 9
Accident Locations**